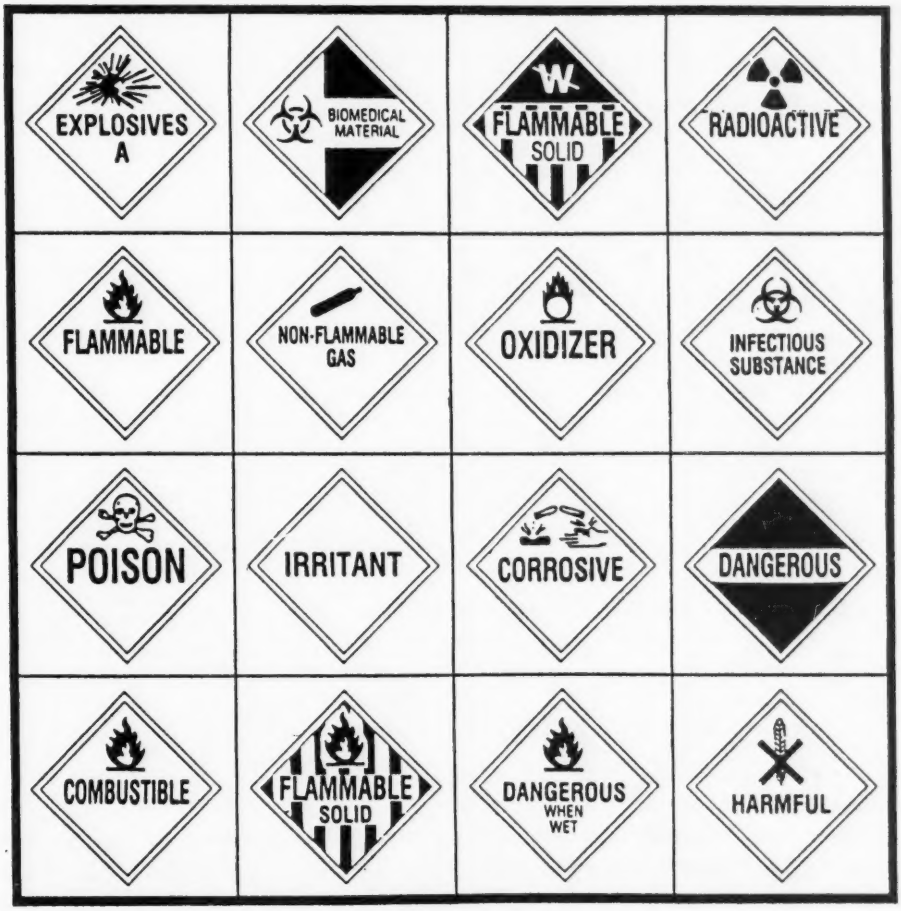
List of Contents and Author Index
Volume 12, 1992

Waste Management

Nuclear • Chemical • Biological • Municipal

(Formerly **Nuclear and Chemical Waste Management**)



PERGAMON PRESS
New York • Oxford • Seoul • Tokyo

WASTE MANAGEMENT

Founding Editor
A. Alan Moghissi
University of Maryland

Editor-in-Chief
William A. Cawley
Lamar University

Regional Editor, Europe
Lawrence G. S. Hughes
Sir Alexander Gibbs and Partners
Gibbs Environmental
Reading, U.K.

Regional Editor, Asia
Kee Kean Chin
Department of Civil Engineering
National University of Singapore
Singapore

Computer Column Editor
Thomas J. Pinson III
Gulf Coast Hazardous Substance Research Center
Lamar University
Beaumont, TX, U.S.A.

Book Review Editor
Julie K. Weaver
Gulf Coast Environmental Library
Gulf Coast Hazardous Substance Research Center
Lamar University
Beaumont, TX, U.S.A.

Editorial Assistant
Charles L. Williams
Lamar University

Editorial Board

Tokuji Annaka
Director, Water Quality Control Department
Ministry of Construction
Ibraki-ken, Japan

Virginia L. Cunningham
SmithKline Pharmaceutical
King of Prussia, PA, U.S.A.

Stacy L. Daniels
Dow Chemical U.S.A.
Midland, MI, U.S.A.

Ramesh Dayal
Ontario Hydro Research Division
Toronto, Ontario, Canada

William Deever
Texaco, Inc.
Port Arthur, TX, U.S.A.

Richard Englebrecht
University of Illinois
Urbana, IL, U.S.A.

Jack R. Hopper
Lamar University
Beaumont, TX, U.S.A.

I. Atly Jefcoat
University of Alabama
Tuscaloosa, AL, U.S.A.

Raymond Loehr
University of Texas at Austin
Austin, TX, U.S.A.

J. Dale Ortego
Lamar University
Beaumont, TX, U.S.A.

Julian Parfitt
School of Environmental Sciences
University of East Anglia
Norwich, U.K.

Frank Parker
Vanderbilt University
Nashville, TN, U.S.A.

Wilson Pitt
Texas A&M University
College Station, TX, U.S.A.

Giovanni Tiravanti
Consiglio Nazionale delle Ricerche
Istituto di Ricerca Sulle Acque
Bari, Italy

Robert Wilcox
BP Oil Company
Cleveland, OH, U.S.A.

Editorial Office: *Waste Management,* P.O. Box 10613, Beaumont, Texas 77710, U.S.A.

Publishing, Advertising and Subscription Offices: Pergamon Press Inc., 660 White Plains Road, Tarrytown, New York 10591-5153, U.S.A., INTERNET "PPI@PERGAMON.COM"; or Pergamon Press Ltd., Headington Hill Hall, Oxford, OX3 0BW, England.

Published 8 per annum: *Annual Institutional Subscription Rate* (1993): £380.00 ($722.00). *Personal Subscription Rate* for those whose library subscribes at the regular rate (1992): £114.00 ($182.00). Sterling prices are definitive. US dollar prices are quoted for convenience only, and are subject to exchange rate fluctuation. Prices include postage and insurance and are subject to change without notice.

WASTE MANAGEMENT

Volume 12, Number 1 1992

CONTENTS

Lars Carlsen **Pia Lassen** **Valerie Moulin**	1	Flocculation Behaviour of Humic Substances in the Presence of Cations: Consequences on the Migration Behaviour of Actinides in the Geosphere
M. Yoshioka **S. Torata** **H. Igarashi** **T. Takahashi** **M. Horie**	7	Glass Melter and Process Development for PNC Tokai Vitrification Facility
S. Saha **P. R. Roy**	17	Assessment of Waste of a Beryllium Extraction Plant
K. Brodén **S. Wingefors**	23	The Effect of Temperature on Water Uptake, Swelling and Void Formation in a Bitumen Matrix with Ion Exchange Resins
M. A. Bangash **J. Hanif** **M. Ali Khan**	29	Sorption Behavior of Cobalt on Illitic Soil
L. O. Odokuma **G. C. Okpokwasili**	39	Role of Composition in Degradability of Oil Spill Dispersants
Won-Jin Cho **Soon-Heung Chang** **Hun-Hwee Park**	45	Uncertainty Analysis of Safety Assessment for High-Level Radioactive Waste Repository
U. J. J. Ijah **L. I. Ukpe**	55	Biodegradation of Crude Oil by *Bacillus* Strains 28A and 61B Isolated from Oil Spilled Soil
C. W. Jeong **K. J. Lee**	61	Propagation of Concentration Waves Through a Sorption Medium with Simultaneous Ion Exchange and Electrolyte Adsorption
Michal Bodzek **Krystyna Konieczny**	75	The Use of Ultrafiltration Membranes Made of Various Polymers in the Treatment of Oil-Emulsion Wastewaters
H. B. L. Pettersson **E. Holm**	85	Investigation of Aerial Dispersion of Uranium Isotopes from a Nuclear Fuel Fabrication Facility
	99	Book Reviews

Volume 12, Numbers 2/3 1992

CONTENTS

Cementitious Materials in Radioactive Waste Management

Ramesh Dayal **A. Alan Moghissi**	103	Editorial: Cementitious Materials in Radioactive Waste Management

M. Atkins **F. P. Glasser**	105	Application of Portland Cement-Based Materials to Radioactive Waste Immobilization
Marla Onofrei **Malcolm N. Gray** **William E. Coons** **Stephen R. Alcorn**	133	High Performance Cement-Based Grouts for Use in a Nuclear Waste Disposal Facility
A. W. Harris **A. Atkinson** **P. A. Claisse**	155	Transport of Gases in Concrete Barriers
John C. Walton **Roger R. Seitz**	179	Fluid Flow Through Fractures in Below Ground Concrete Vaults
R. Dayal **E. J. Reardon**	189	Cement-Based Engineered Barriers for Carbon-14 Isolation
U. R. Berner	201	Evolution of Pore Water Chemistry During Degradation of Cement in a Radioactive Waste Repository Environment
Eric J. Reardon	221	Problems and Approaches to the Prediction of the Chemical Composition in Cement/Water Systems
F. T. Ewart **J. L. Smith-Briggs** **H. P. Thomason** **S. J. Williams**	241	The Solubility of Actinides in a Cementitious Near-Field Environment
I. G. McKinley **W. R. Alexander**	253	A Review of the Use of Natural Analogues to Test Performance Assessment Models of a Cementitious Near Field
K. Brodersen	261	Leaching Due to Hygroscopic Water Uptake in Cemented Waste Containing Soluble Salts
R. J. Serne **R. O. Lokken** **L. J. Criscenti**	271	Characterization of Grouted Low-Level Waste to Support Performance Assessment
H. M. Johnston **D. J. Wilmot**	289	Sorption and Diffusion Studies in Cementitious Grouts
	I	Software Survey Section

Volume 12, Number 4 1992

CONTENTS

	iii	Publisher's Notice
A. Alan Moghissi	299	Editorial
Paul C. Williams	301	Supercompaction of Dry Active Waste: An Overview
M. Srinivasan **M. V. Dingankar**	313	Long Lived Fission Reactor Waste Problem: Fact or Fiction?
Jong Soon Song **Kun Jai Lee**	323	System Performance Assessment of Final Repository for Radioactive Wastes Using First-Order Reliability Method

S. V. S. Rao **K. B. Lal** **R. V. Amalraj**	337	Incorporation of Spent Ion-Exchange Resins in Thermosetting Resins
Z. Gorzka **M. Kaźmierczak** **A. Socha** **A. Michalska-Jednoralska**	345	Utilization and Treatment of Exhausted Cooling Oil-Emulsions
Emil Sørensen **Anne Belinda Bjerre**	349	Combined Wet Oxidation and Alkaline Hydrolysis of Polyvinylchloride
W. Sztark	355	Investigation of the Ozonolysis of Ethylenebisdithiocarbamate-Fungicides in Model Solutions
M. V. Dingankar **V. Kalyanasundaram** **M. Srinivasan**	359	A Reassessment of Long-Lived Actinide Waste Hazard Potential from Th-^{233}U-Fueled Reactors
Mamoru Nishioka **Nakamichi Yamasaki** **Hiroshi Amano** **Masanori Higuchi**	373	Immobilization of Tritiated Water by Hydrothermal Hot-Pressing
A. V. Shekdar **K. N. Krishnaswamy** **V. G. Tikekar** **A. D. Bhide**	379	Indian Urban Solid Waste Management Systems—Jaded Systems in Need of Resource Augmentation
	I	List of Contents and Author Index, Volume 12, 1992